

HINDE -- Appln. No. 09/623,427

REMARKS

Reconsideration and allowance of the present application in view of the Remarks filed on or about February 28, 2002, and the foregoing additional amendments, are respectfully requested.

Upon entry of the above amendments, claims 1-23 and 25-27, 29-45, and 46-49 will be pending in this application.

Claims 1 and 25 now explicitly recite the water solubility at temperatures between 5 and 35°C. The reference to "weight %" has been inserted in claims 1 and 45 for the neutralized acid-functional groups.

Also, in the Appendix, claim 3 is shown in the correctly formatted form wherein "either" is shown as deleted, to conform to the amended clean copy.

It also appears that in the Appendix of the previously filed Amendment amended claim 45 may have inadvertently been presented as claim 46. The present Appendix correctly numbers claim 45.

In view of the foregoing, and the reasons previously submitted, the claims are now believed to be in form for allowance, and such action is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, he or she is kindly requested to contact the undersigned at the telephone number listed below.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached Appendix is captioned **"Version with markings to show changes made"**.

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All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,
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APPENDIX: VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

1. (Amended) Water-soluble film which is soluble in water at temperatures between 5 and 35°C comprising at least one polyurethane polymer, which at least one polyurethane polymer comprises:

2 to 35 weight %, based on the weight of polyurethane polymer, of poly(ethylene oxide) groups which have a chain length(s) corresponding to a number average molecular weight within the range of from 300 to 3,000 Daltons;

15 to 150 millequivalents, per 100g of polyurethane polymer, of acid-functional groups; and wherein

at least 50 weight% of the acid-functional groups are neutralised, such neutralisation being with at least one base, at least part of which is at least one non-volatile base;

and said at least one polyurethane polymer is a chain extended product formed using:

(A) a prepolymer component comprising an isocyanate-terminated polyurethane prepolymer, said component being formed from reactants which comprise:

- (i) at least one organic polyisocyanate,
- (ii) at least one isocyanate-reactive compound providing said poly(ethylene oxide) groups in the resulting polyurethane polymer, and
- (iii) at least one isocyanate-reactive compound providing said acid-functional groups in the resulting polyurethane polymer, and

(B) an active hydrogen component comprising at least one active hydrogen chain-extending compound.

3. (Amended) Film according to [either] claim 1 [or claim 2] wherein the amount of said poly(ethylene oxide) groups is within the range of 5 to 35 weight % based on the weight of the polyurethane polymer [more preferably 5 to 20 weight %, and especially 5 to 15 weight %].

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25. (Twice Amended) Aqueous solution of at least one polyurethane polymer which is soluble in water at temperatures between 5 and 35 °C, said at least one polymer comprising:

2 to 35 weight %, based on the weight of polyurethane polymer, of poly(ethylene oxide) groups which have a chain length(s) corresponding to a number average molecular weight within the range of from 300 to 3,000 Daltons;

15 to 150 millequivalents, per 100g of polyurethane polymer, of acid-functional groups; and wherein

at least 50 weight% of the acid-functional groups are neutralised, such neutralisation being with at least one base, at least part of which is at least one non-volatile base;

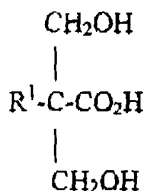
and said at least one polyurethane polymer is a chain extended product formed using:

(A) a prepolymer component comprising an isocyanate-terminated polyurethane prepolymer, said component being formed from reactants which comprise:

- (i) at least one organic polyisocyanate,
- (ii) at least one isocyanate-reactive compound providing said poly(ethylene oxide) groups in the resulting polyurethane polymer, and
- (iii) at least one isocyanate-reactive compound providing said acid-functional groups in the resulting polyurethane polymer, and

(B) an active hydrogen component comprising at least one active hydrogen chain-extending compound.

33. (Amended) Process according to [any one of claims 30 to 32] claim 30 wherein the isocyanate-reactive compound providing acid functional groups in step I is a dihydroxyalkanoic acid of formula



where R¹ is hydrogen or alkyl.

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45. (Twice Amended) Polyurethane polymer which has:

2 to 35 weight %, based on the weight of polyurethane polymer, of poly(ethylene oxide) groups which have a chain length(s) corresponding to a number average molecular weight within the range of from 300 to 3000 Daltons;

15 to 150 milliequivalents, per 100g of polyurethane polymer, of acid-functional groups; and wherein

at least 50 weight% of the acid-functional groups are neutralised, such neutralisation being with a base(s) at least part of which is a non-volatile base(s);

and said polyurethane polymer being a chain extended product formed using:

(A) a prepolymer component comprising an isocyanate-terminated polyurethane prepolymer, said component being formed from reactants which comprise :

- (i) at least one organic polyisocyanate;
 - (ii) [if poly(ethylene oxide) groups are present,] at least one isocyanate-reactive compound providing said poly(ethylene oxide) groups in the resulting polyurethane polymer; and
 - (iii) at least one isocyanate-reactive compound providing said acid-functional groups in the resulting polyurethane polymer,
- and

(B) an active hydrogen component comprising an active hydrogen chain-extending compound(s);

and, wherein said polyurethane polymer is capable of forming a water-soluble film which is soluble in water at temperatures between 5° and 35° C.